

Application No. 10/775,542  
Filed: February 10, 2004  
TC Art Unit: 3742  
Confirmation No.: 6694

# REMARKS

Claims 1-12, 14-18, and 38 have been rejected under 35 U.S.C. § 103(a) over Rokhvarger (US 5,911,941) or Brennan (US 6,344,634) in view of Bowden (GB 2 262 333) combined with Sato et al. (US 2003/0071037) or Tsukamoto et al. (US 5,954,986). Reconsideration of this rejection is respectfully requested for the following reasons.

Independent claim 1 recites, among other things, a furnace housing having a furnace chamber, one or more eductors each having an outlet located in a furnace chamber, and one or more openings through a support assembly. Each eductor is aligned with a respective opening through the support assembly to provide a circulating path from one side of the furnace chamber to the other side.

Bowden has been cited for showing a furnace for sintering ceramics including "eductors 23 on opposite sides of the chamber 11." The elements 11, however, are not eductors. These elements are merely "tubes 23 to and from the refractory box 11." (Bowden, page 7, lines 16-17.) These tubes merely provide a flow path to direct gas to a heater 20. An eductor, in contrast, is a device that provides a high volume flow of gas into the furnace. (See Applicant's specification, page 6, lines 17-23.)

Additionally, Bowden has been cited for showing a "screen 24 supporting the workpiece 19 [that] may be porous to allow heated gas passing therethrough" (Office action, page 3). The screen 24 is a thermal screen that surrounds an article to be sintered and is of a reticulated structure made of ceramic material. (Bowden, page 7, lines 28-33.) There is no indication that such a

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reticulated thermal screen supports or is able to support a workpiece to be thermally processed.

Further, Sato has been cited for showing an eductor 9 for supplying a gas through holes 6a, 7a, 6b, 7b (Office Action, page 3). The element 9, however, is a degreasing gas lead pipe, not an eductor. Also, the holes 6a, 7a, 6b, 7b are through outer and inner insulating members 6 and 7. There is no indication that such insulating members support or are able to support the object to be sintered.

Tsukamoto has been cited to show air jet valves 19 above and below a load support 13 which includes openings 94 to allow air circulation therethrough (Office Action page 3). However, Tsukamoto does not overcome the deficiencies of Bowden and Sato in that it does not teach the use of eductors. Furthermore, Tsukamoto relates to a type of microwave oven for cooking food including a turntable 13. The openings 94 in the turntable 13 are not aligned with eductors to provide a circulation path from one side of the oven to the other. Similarly, the air jet valves 19 are not aligned with eductors to provide a circulation path from one side of the oven to the other.

For these reasons, independent claim 1 and the claims dependent therefrom are believed to be patentable over Rokhvarger or Brennan in view of Bowden combined with Sato or Tsukamoto.

Claim 13 has been rejected under § 103(a) over Rokhvarger or Brennan in view of Bowden combined with Sato et al. or Tsukamoto et al. and further in view of Marks et al. (US 5,660,543). Claim 13 is believed to be patentable for the reasons set forth above with respect to claim 1 and no further comment thereon is believed necessary at this time.

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Claims 19-37, 39, and 40 have been rejected under § 103(a) over Rokhvarger or Brennan in view of Bowden combined with Marks et al. (US 5,660,543).

Both independent claims 19 and 23 recite one or more eductors on each side of the furnace chamber. None of Rokhvarger, Brennan, or Bowden discloses, teaches, or suggests eductors. As noted above, the elements 11 of Bowden are not eductors, but rather are "tubes 23 to and from the refractory box 11." (Bowden, page 7, lines 16-17.) These tubes merely provide a flow path to direct gas to a heater 20. Eductors, in contrast, are devices that provide a high volume flow of gas into the furnace. (See Applicant's specification, page 6, lines 17-23.) Marks does not disclose eductors and thus does not overcome the deficiencies of Rokhvarger, Brennan, or Bowden in this regard.

Furthermore, claim 19 recites one or more eductors operative in alternating manner. Claim 23 recites a controller in communication with the eductors to operate the eductors in alternating manner. In Marks, an impeller 40 circulates air through a furnace. A diverter valve 58 is moved from one position to another to cause the flow to alternate. Marks, however, does not teach operating devices that provide high volume fluid flow in an alternating manner to provide such alternation of flow. Thus, claims 19 and 23 and the claims dependent therefrom are believed to be patentable for this reason as well.

Dependent claim 33 recites a plurality of openings extending through the hearth from one side of the furnace chamber to the other side, the eductors arranged in pairs on respective sides of the chamber in line with a respective opening through the hearth. None of the cited references discloses openings extending through

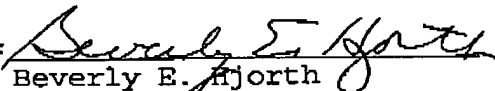
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a hearth from one side of a furnace chamber to the other, and concomitantly do not disclose eductors arranged in pairs in line with such openings. Accordingly, claim 33 is believed to be patentable for this reason as well.

In view of the above remarks, all claims are believed to be in condition for allowance, and reconsideration and withdrawal of the rejection are respectfully requested. The Examiner is encouraged to telephone the undersigned attorney to discuss any matter that would expedite allowance of the present application.

Respectfully submitted,

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